

PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Mats BLÜCHER et al.) Confirmation No.: 1714
Application No.: 10/609,489) Group Art Unit: 3722
Filed: July 1, 2003) Examiner: Willmon Fridie Jr.
For: APPARATUS FOR CHIP)
REMOVING MACHINING)

Commissioner for Patents
U.S. Patent and Trademark Office
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Alexandria, VA 22314

Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW
TO ACCOMPANY A NOTICE OF APPEAL

In response to the Final Office Action dated August 21, 2008, the period for response to which extends through November 21, 2008, a Pre-Appeal Brief Review is requested in the above-identified application.

Status of the Claims

In the Office Action dated August 21, 2008, claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,599,050 to Sjöö (“Sjöö”) in view of U.S. Patent No. 5,863,162 to Karlsson (“Karlsson”).

Claims 1-9 are pending as recited in the Amendment filed on August 3, 2006.

Summary of Embodiments of the Invention

With reference to Figs. 1-3 of the instant application, in an embodiment Applicants' invention is directed to an apparatus for chip removing machining, including a first part 1 and a second part 15 coupled together by a coupling. The coupling includes two interacting surfaces 3, 17 and a clamping member 21 for forcing the surfaces together. The interacting surfaces are profiled with male members 19, 20 and female members 7A, 7B, respectively that are intercoupled to establish a firm locking of the first and second parts against each other. The first and the second parts are provided with aligned holes 5, 14 for receiving the clamping member. The male and the female members are oriented on the interacting surfaces such that the male and female members intercouple only in a single position. The orientation of the male and female members prevents the male and female members from intercoupling in another position.

As described at paragraph 0005 of Applicants' specification, an object of the invention is to provide a coupling between two tool parts, such that the coupling may transfer a large torque at the same time as the tool parts only may assume one single position in relation to each other.

As described at paragraph 0033 of Applicants' specification, the forming of a male member (e.g. elongate ridge 20) with a maximum extension thereof in a direction S3, ensures that the second part (e.g. cutting head 15) may only be mounted in one way on the first part (e.g. holder 1), which is realized by studying the groove configuration of the front surface 3 of the holder 1.

As described at paragraph 0035 of Applicants' specification, by observing the groove configurations of the front surface 3 and the support surface 17, it is realized that the only place where the elongate ridge 20 may be received is in the first groove 7A. Therefore, the risk of the cutting head 15 being mounted in an incorrect position is eliminated.

As described at paragraph 0036 of Applicants' specification, since the cutting head 15 may only be mounted in a single position on the holder 1, it is possible to arrange a cooling channel 11 in such a way that cooling medium coming out from the same is directed towards an edge portion 16 of the cutting head 15.

Arguments

Claims 1-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sjöö in view of Karlsson. Applicants respectfully traverse the rejection. In contrast to Applicants' invention, Sjöö is directed to a tool coupling including a holder and a cutting insert adapter that may be connected with each other in multiple positions. As described at col. 4, ll. 11-28, and illustrated in Figs. 1-3 of Sjöö, the axial end surfaces of holder 1 and adapter 3 include serrations 12 and 16 respectively. The groove configuration of the respective serrations 12, 16 have a mutually adapted design, and are oriented parallel to each other. Displacement of a stud screw 5 in the center hole 17 brings the holder 1 and the adapter 3 together until the serrations 12, 16 are in complete engagement with each other. As described at col. 6, ll. 19-24 of Sjöö, the tool coupling is symmetrical in relation to its longitudinal center axis 13, which means that the holder may be used both for tools of right-hand type and left-hand type. In certain special applications, for instance in connection with certain special types of turning, the adapter 3 may be rotated 180° relative to the holder 1. As stated at col. 6, ll. 25-26, “[T]his may be effected by the tool coupling according to the present invention [of Sjöö].” Thus, Sjöö clearly discloses a tool coupling including a holder and a cutting insert adapter that may be connected with each other in multiple positions. In this regard, at pages 2-3, the Office Action acknowledges that “Sjöö lacks the disclosure of the male and the female members being oriented on the interacting surfaces such that the male and female members intercouple only in a single position and the orientation of the male and female members prevents the male and female members from intercoupling in another position.” At page 3, line 1, the Office Action goes on to allege that “Karlsson et al. discloses such an arrangement” and that “it would have been obvious to a skilled artisan at the time of the invention to provide Sjöö with the configuration of male and female members as taught by Karlsson et al in order to preclude the male and female members from intercoupling in another position.”

Applicants disagree with the Office Action's interpretation of Karlsson. Karlsson discloses a helix drill which includes a tool tip 10 and a drill body 12. The tool tip 10 includes a rear end surface 16. As described at col. 3, lines 18-29, the end surface 16 is provided with a number of rearwardly protruding radially extending, spaced-apart substantially identical lips 30. The lips 30 are preferably four in number and consist of two pairs of projections in the form of lips 30A and 30B, wherein each pair is arranged on a respective line L1 and L2, extending substantially perpendicular to the axis of rotation 22. The imaginary lines L1 and L2 form an "X" shape with one another. The line L2 forms an acute angle β with the line L1.

The drill body 12 is provided with a front surface 24 facing the tool tip 10, which during mounting is arranged close to the rear end surface 16 of the tool tip 10. As described at col. 4, lines 12-36, the front surface 24 is provided with a number of spaced, radially extending, identical recesses in the form of grooves 26A, 26B. The grooves 26A, 26B form an X in the front surface 24. The grooves 26A, 26B coincide with respective imaginary radial lines L1' and L2' extending substantially perpendicular to the axis 22. The imaginary lines L1' and L2' define an acute angle β' . The angles β and β' are equal. The number of grooves 26 is the same as the number of lip pairs on the end surface 16. As described at col. 4, lines 46-48, the lips and the grooves form a joint with a number of wedging connections. Applicants submit that the "X" shape arrangement of lips and corresponding grooves, having equal angles β and β' , clearly allows the tool tip 10 to intercouple with drill body 12 in two positions, by simply rotating the tool top 180° around the axis of rotation 22. Nothing in Karlsson discloses otherwise.

Thus, Applicants respectfully submit that Karlsson also does not show at least the features of "the male and the female members are oriented on the interacting surfaces such that the male and female members intercouple only in a single position, the orientation of the male and female members prevents the male and female members from intercoupling in another position," as recited in claim 1. Thus, a combination of Sjöö and Karlsson fails to disclose this feature.

Moreover, not only does each of Sjöö and Karlsson fail to disclose this feature, each of Sjöö and Karlsson teach away from the male and female members intercoupling only in a single position.

Claims 2-7 depend from claim 1 and recite the same combination of allowable features recited in independent claim 1, as well as additional features that define over the applied

references. In consideration of the above, Applicants respectfully submit that claims 8 and 9 are also allowable at least for the following reasons:

Claim 8 recites "the axially irregular surface profile adapted to be received in a corresponding axially irregular surface profile of the holder surface at a first angular position about the center axis with respect to the holder surface; wherein the surface profile of the head surface precludes reception thereof in the surface profile of the holder surface at all other angular positions about the axis such that the head surface and the holder surface intercouple only in a single position and no other position."

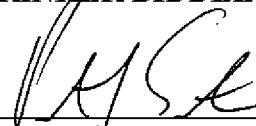
Claim 9 recites "the axially irregular surface profile adapted to be received in a corresponding axially irregular surface profile of the head surface at a first angular position about the center axis with respect to the head surface; wherein the surface profile of the holder surface precludes reception thereof in the surface profile of the head surface at all other angular positions about the axis such that the holder surface and the head surface intercouple only in a single position and no other position."

Conclusion

In view of the foregoing, Applicants submit that the outstanding rejection should be withdrawn, and claims 1-9 should be allowed. In this regard, Applicants respectfully point out that the Office has not established a proper *prima facie* case of obviousness despite the lengthy prosecution of the instant application, including three separate requests for pre-appeal brief review. Applicants request a Notice of Allowance.

Respectfully submitted,

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